

Claims:

1. A pump comprising:
 - a body, a chamber being defined in the body, a first inlet and a first outlet being defined in the body and in communication with the chamber;
 - a first rotor rotatably received in the chamber and connected with a first shaft, the first rotor being generally circular with a blade extending outward therefrom, the blade comprising first and second mating surfaces, a third mating surface being formed at the blade between the first and second mating surfaces;
 - a second rotor rotatably received in the chamber and connected with a second shaft, the second rotor being generally circular with an engaged recess inward defined therein for mating with the blade of the first rotor, the engaged recess comprising first and second engaged surfaces for mating with the first and second mating surfaces, a third engaged surface being formed at the bottom of the engaged recess between the first and second engaged surfaces for mating with the third mating surface of the blade.
2. The pump as claimed in claim 1, wherein a second inlet and a second outlet are further defined in the body in communication with the chamber.
3. The pump as claimed in claim 2, wherein the first inlet is opposite to the second outlet and located near the position where the third mating surface and the third engaged surface begin meshing, the first outlet located near the position where the blade and the recess of the first and second rotors respectively begin meshing.
4. The pump as claimed in claim 3, wherein the second outlet is defined between the first outlet and the second inlet.
5. The pump as claimed in claim 4, wherein each of the first and second inlets and the first and second outlets has a check valve therein for preventing reflux therefrom.

6. The pump as claimed in claim 5, wherein a plurality of blades is equally spacedly formed at the first rotor, and a plurality of engaged recesses is equally spacedly defined in the second rotor for respectively mating with the blades.
7. The pump as claimed in claim 6, wherein the profile curve of the first mating surface is a symmetrical reflection curve of that of the second mating surface, and the profile curves of the first and second engaged surfaces are conjugate curves of those of the first and second mating surfaces, respectively.
8. The pump as claimed in claim 7, wherein a channel is defined in the body in communication with the chamber and surrounds an end of the chamber for providing a buffer area thereby absorbing offset of the second rotor during a compression cycle.
9. The pump as claimed in claim 6, wherein the profile curve of the first mating surface of the first rotor has a different curve length from that of the second mating surface, the profile curve of the first mating surface is a reflection curve of that of the second mating surface, and the profile curves of the first and second engaged surfaces are conjugate curves of those of the first and second mating surfaces, respectively.
10. The pump as claimed in claim 9, wherein during a compression cycle, an apex formed at the junction of the first engaged surface and a peripheral surface of the second rotor wipes an inner wall of the chamber to clean the inner wall thereby preventing the inner wall from begriming.
11. A pump comprising:
 - a body, a chamber being defined in the body and comprising first and second circular portions in communication with each other, first and second inlets and first and second outlets being defined in the body in communication with the chamber;
 - a first rotor rotatably received in the first portion of the chamber and connected with a first shaft;

- a second rotor rotatably received in the second portion of the chamber for mating with the first rotor, the second rotor connecting with a second shaft.
12. The pump as claimed in claim 11, wherein each of the first and second inlets and the first and second outlets has a check valve therein for preventing reflux therefrom.
13. The pump as claimed in claim 12, wherein the second outlet is defined between the first outlet and the second inlet.
14. A pump comprising:
- a body, a chamber being defined in the body, a first inlet and a first outlet being defined in the body and in communication with the chamber, a channel being defined in the body in communication with the chamber;
 - a first rotor rotatably received in the chamber and connected with a first shaft;
 - a second rotor rotatably received in the chamber for mating with the first rotor, the second rotor connecting with a second shaft.
15. The pump as claimed in claim 14, wherein the channel surrounds an end of the chamber for providing a buffer area thereby absorbing offset of the second rotor during a compression cycle.
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